WINZLER & KELLY
CONSULTING ENGINEERS

Ref: 0242505001-32006

August 15, 2005

Ms. Joan Fleck
North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403

Re: **Ozone/Hydrogen Peroxide Remedial System Installation and Start-up Report, Former Mead Clark Lumber Facility, 175 Railroad Street, Santa Rosa, California, NCRWQCB Case # 1TSR016, UST Fund Claim #853**

Dear Ms. Fleck:

In accordance with the December 2004 Remedial Action Plan Addendum, Winzler & Kelly Consulting Engineers (Winzler & Kelly) conducted the following activities during the second quarter of 2005 at the Former Mead Clark Lumber Facility, 175 Railroad Street, Santa Rosa, California (Figure 1):

- Installed 12 ozone/hydrogen peroxide (O3/H2O2) sparge points SP-1 through SP-12;
- Installed an O3/H2O2 system and completed start-up activities; and
- Performed operation and maintenance on the O3/H2O2 system following system start-up.

OZONE/HYDROGEN PEROXIDE SYSTEM INSTALLATION

A summary of the field activities related to the installation of the O3/H2O2 sparge points and the start-up of the O3/H2O2 system is provided below.

Field Activity Dates:	April 25 thru 28, 2005 –	Drilled and installed 12 nested O3/H2O2 sparge points.
	May 16 thru 19, 2005 –	System installation, trenching, and O3/H2O2 lines installation.
	June 2 and 3, 2005 –	O3/H2O2 system unit installation and start-up.
	June 8, 2005 –	System operation and maintenance.
Personnel Present:	Winzler & Kelly's Geologist, Brian Wingard Winzler & Kelly's Environmental Engineer, Pon Xayasaeng	
Permits:	Prior to drilling, Winzler & Kelly obtained a County of Sonoma Department of Health Services Drilling Permit #4649 dated April 12, 2005 (Appendix A).	
Drilling Contractor:	Woodward Drilling Co., Inc., of Rio Vista, CA. C-57 License #710079.	

495 Tesconi Circle, Santa Rosa, CA 95401-4696
tel 707.523.1010 fax 707.527.8679
www.w-and-k.com

Drilling Method: The sparge points were installed using 8-inch hollow-stem augers. A detailed summary of the nested sparge point installation procedures is provided in the Site-Specific Ozone Sparge Point Installation Procedures (Appendix B).

Number of Borings: Twelve soil borings were completed and converted to nested O3/H2O2 sparge points SP-1 through SP-12 (Figure 2).

Well Depths: The nested O3/H2O2 sparge points SP-1 through SP-12 were drilled and installed to total depths ranging from 33 to 35 feet below ground surface (bgs).

O3/H2O2 Sparge Point Construction: The nested O3/H2O2 sparge points were constructed using 0.5-inch stainless steel tubing, with 3 feet 1.0-inch diameter of 0.020-slotted screen for the ozone (lower) and 3 feet of 1.0-inch diameter 0.010-slotted screen for the hydrogen peroxide (upper). The screens were surrounded by a #2/12 sand pack with a bentonite plug between the two screens and another bentonite plug above the hydrogen peroxide screen. The nested sparge points were sealed with a cement/bentonite mixture above the last bentonite plug to ground surface. Sparge point heads are protected with an 18-inch heavy-duty steel cover and apron, flush-to-grade box to protect the system housing. The sparge points are fitted with a 0.5-inch diameter stainless steel tee, check valves, compression fittings and Teflon tubing that supplies ozone. The hydrogen peroxide (H2O2) is delivered using black polypropylene tubing. The Teflon tubing and polypropylene tubing are contained in 2-inch Schedule 40 PVC conduits that are buried approximately 12 inches bgs. Details of the sparge points construction is shown on Figures 3.

Soil Disposal: Soil samples were collected from the soil cuttings generated by the sparge point activities and analyzed for the appropriate parameters to meet soil disposal requirements. A copy of the waste manifest is provided in Appendix C.

SITE GEOLOGY AND HYDROGEOLOGY

O3/H2O2 nested sparge points SP-1 through SP-12 were logged from approximately 25 feet bgs to the total depth, verifying the underlying aquitard. This is to ensure proper placement of nested sparge points. Soils encountered during the sparge point installation were consistent with previous soil borings and wells completed at the site. Copies of the boring logs are provided in Appendix C. In general, soils encountered consisted of stratified beds of sandy clay to gravelly silts, sand, and gravels.

OZONE/HYDROGEN PEROXIDE REMEDIATION SYSTEM INSTALLATION

From May 16 through 19, 2005, Winzler & Kelly oversaw Dunaway Enterprises, Inc. complete the system installation, including trenching and installation of the O3/H2O2 system components. This work also included bringing in electrical service, installing the O3/H2O2 unit enclosure, trenching and backfilling from the enclosure to the individual nested sparge points (SP-1 through SP-12), and completing all ozone sparge point/H2O2 injection connections.

On June 2 and 3, 2005, the remedial system manufacturer, Applied Process Technology, Inc. (APT), of Pleasant Hill, California, installed the O3/H2O2 unit and completed final system hook-up. Prior to the start-up of the O3/H2O2 system, APT field personnel performed a leak test on each sparge point supply line, valves, and connections using compressed oxygen. The field test consisted of pressurizing the ozone supply lines with 30 pounds per squared inch (psi) of generated oxygen and then used a soap spray to check each sparge point for leaks. The hydrogen peroxide supply lines were tested using de-ionized water to check for leaks. Any encountered leaks were repaired and the sparge points recheck after the repairs. The system passed the leak test prior to any generation of ozone.

OZONE/HYDROGEN PEROXIDE SYSTEM START-UP

On June 3, 2005, an initial test run of the ozone generator and ozone sparging was performed. The generator pressure was adjusted so that ozone flow to the each sparge point was approximately 15 standard cubic feet per hour (SCFH). The ozone rotometer measured the quantity of ozone flow and responds to adjustments made on the generator pressure knob. In addition, the ozone injection backpressure is measured with a pressure gauge. The backpressure of each sparge point was observed to range from 7.2 to 13.0 psi. Over time the backpressure was observed to decrease in each of the sparge points. The ozone generator was set at approximately 0.7 amps, which produced 0.5 pounds of ozone per day (lbs O3/day) injected to each sparge points. The sparge points initially in operation are SP-3, and SP-5 through SP-11. The ozone injection was programmed to run on an 80-minute cycle (10 minutes per sparge point and one sparge point at a time) followed by 5 minutes of compressed air. The air injection was set at 1.0 standard cubic feet per minute (SCFM) on the air flow rotometer and is intended to force ozone out into the formation. Also, the air injection will purge the residual ozone in the sparge point, which prevents the potential for ozone leakage to the sparge point well heads. A pressure gauge on the air delivery line is used to monitor the backpressure of each sparge point during air injection. The O3/H2O2 system was allowed to run for one continuous cycle and no ozone leakage was observed. At this time only ozone is being injected. Hydrogen peroxide injection will be initiated in July 2005. A chemical pump will be used to deliver H2O2 to each well, which is programmed to run on an 80-minute batch cycle every 6 hour.

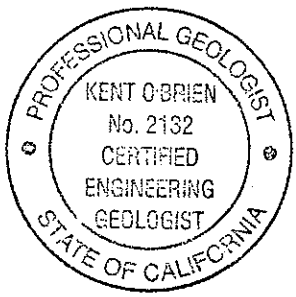
On June 8, 2005, Winzler & Kelly performed the first operation and maintenance inspection after 5 days of continuous run time. The O3/H2O2 system was operating as designed and consequently the ozone generator rate was increased from 0.5 lbs O3/day to 1.55 lbs O3/day to deliver to one sparge point at a time. The ozone flow rate was kept at 15 SCFH and the compressed air flow remained at 1.0 SCFM. The O3/H2O2 system has been running continuously for 116.4 hours.

Operation and maintenance inspections are scheduled for the 1st and 15th of each month. During these inspections, system parameters (includes ozone generator rate and flow rate, sparge point backpressures, H2O2 rate, and operation times) will be recorded. The O3/H2O2 system updates will be reported in the semi-annual groundwater monitoring report.

If you have any questions or comments regarding this project, please contact Mr. David J. Vossler, Project Manager, at (707) 523-1010.

Sincerely,
WINZLER & KELLY

Pon Xayasaeng
Environmental Engineer



Kent O'Brien, PG, CEG
Senior Project Geologist

sc

Attachments

Figures:

- Figure 1 – Location Map
- Figure 2 – New Ozone Sparge System Piping Layout
- Figure 3 – Typical Nested Ozone / Hydrogen Peroxide Sparge Point Construction Detail

Appendices:

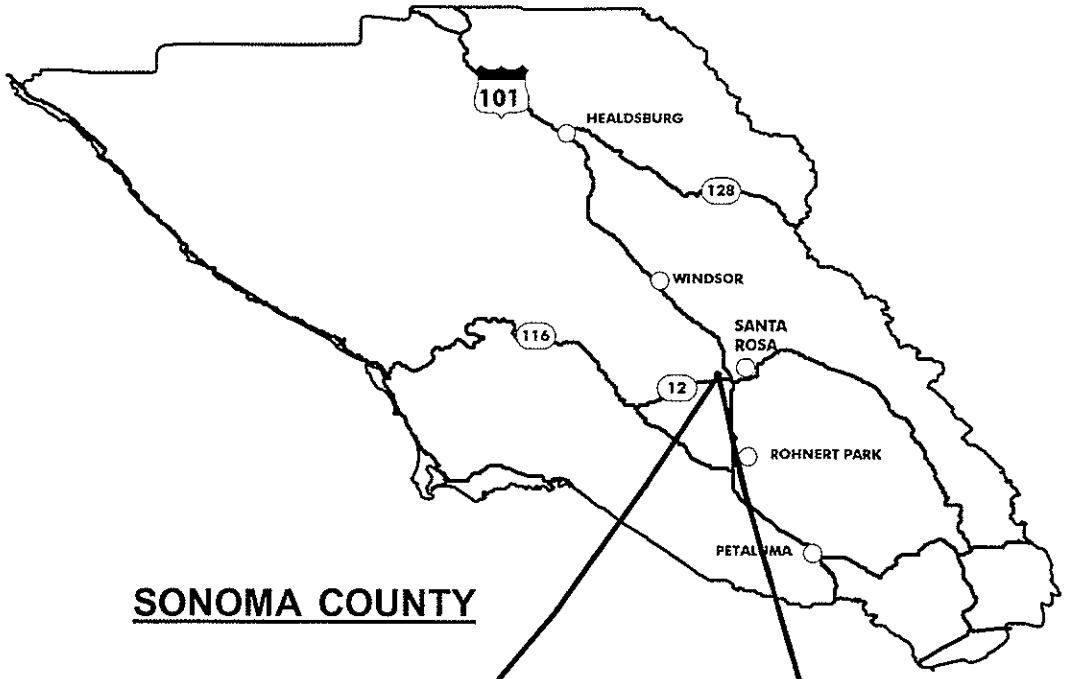
- Appendix A – Drilling Permit
- Appendix B – Site-Specific Field Procedures
- Appendix C – Waste Manifest
- Appendix D – Boring Logs

c: Mr. Kevin Destruel, Mead Clark Lumber Company, P.O Box 529, Santa Rosa, CA 95402

Mr. Paul Fitzpatrick, Law Offices of Clement, Fitzpatrick & Kenworthy, 3333 Mendocino Avenue, Santa Rosa, CA 95401

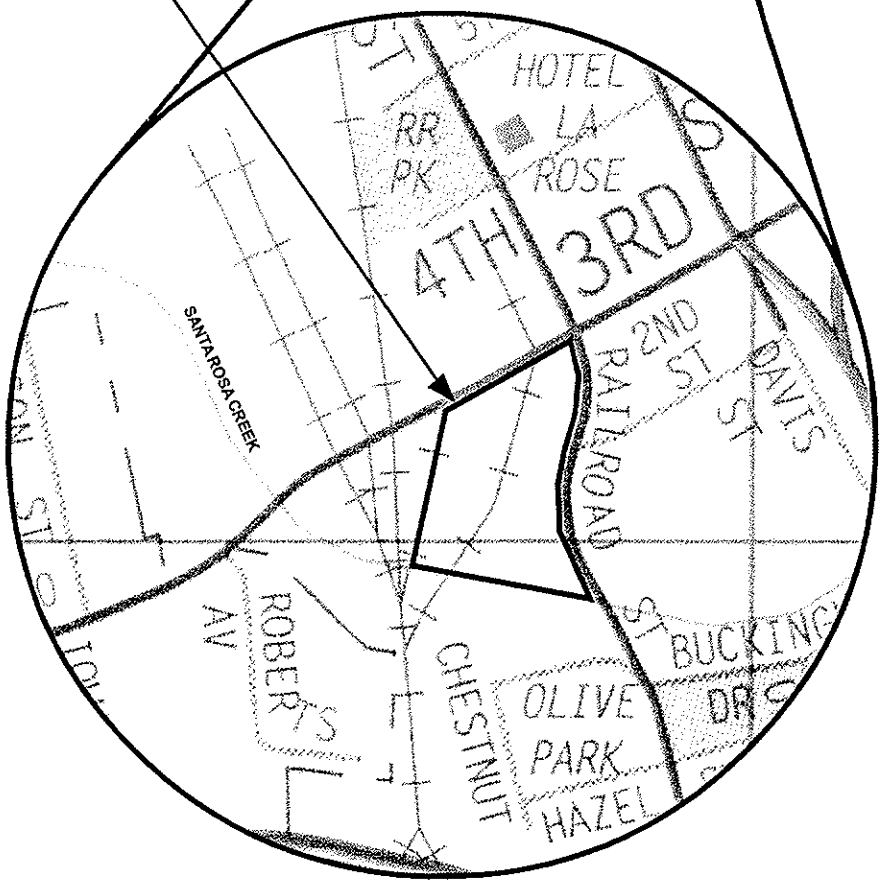
Ms. Carla den Dulk, The RIM Corporation, 915 17th Street, Modesto, CA 95354

Figures



SONOMA COUNTY

SITE LOCATION



LOCATION MAP
FORMER MEAD CLARK LUMBER COMPANY
THIRD & RAILROAD STREETS
SANTA ROSA, CA

FIGURE 1

WINZLER & KELLY
CONSULTING ENGINEERS

J:/03/242501/PAGEMAKER/242501F01.PMD 11/18/04

J:\03\242501\CAD\Sparge Well Layout.dwg Jul 06, 2005 - 11:07am

NWP RAILROAD

N

0 30 60

SCALE: 1"=30'

2" Long Radius Sweep

2" Conduit w/ 2 Sparge Lines

2" Conduit w/ 1 Sparge Line

2" Conduit w/ 4 Sparge Lines

DPE-9 Ⓔ

GW-7

SP-7

ⒺDPE-1

SP-6

2-3" Conduit w/ 12 ⅜" & ¼" Lines

SP-8

GW-12

GW-31

DPE-2 Ⓔ

Ⓔ DPE-8

2" Conduit w/ Sparge Line

New Ozone Control Panel & Enclosure Attached to a 6'x8' Concrete Slab

SP-9

SP-5

2" Conduit w/ 4 Sparge Lines

2" Conduit w/ 3 Sparge Lines

DPE-7 Ⓔ

GW-18

DPE-3 Ⓔ

SP-10

SP-4

GW-30

2" Conduit w/ 2 Sparge Lines

GW-37

2" Long Radius Sweep

2" Conduit w/ 3 Sparge Lines

GW-32

Ⓔ DPE-6

GW-2

SP-3

SP-11

POOL

Ⓔ DPE-4

2" Conduit w/ 2 Sparge Lines

Ⓔ DPE-5

2" Conduit w/ 1 Sparge Line

SP-2

GW-1

2" Conduit w/ 1 Sparge Line

SP-12

SP-1

GW-38

3/4" Electrical w/ 4 Wires

POOL HOUSE ELECTRICAL PANEL

GW-33

COURTYARD MARRIOTT

MAIN ELECTRICAL ROOM

GW-13A

GW-39

GW-35

GW-26A

GW-16

ELECTRICAL CONDUITS TO HOTEL SERVICE PANEL

LEGEND

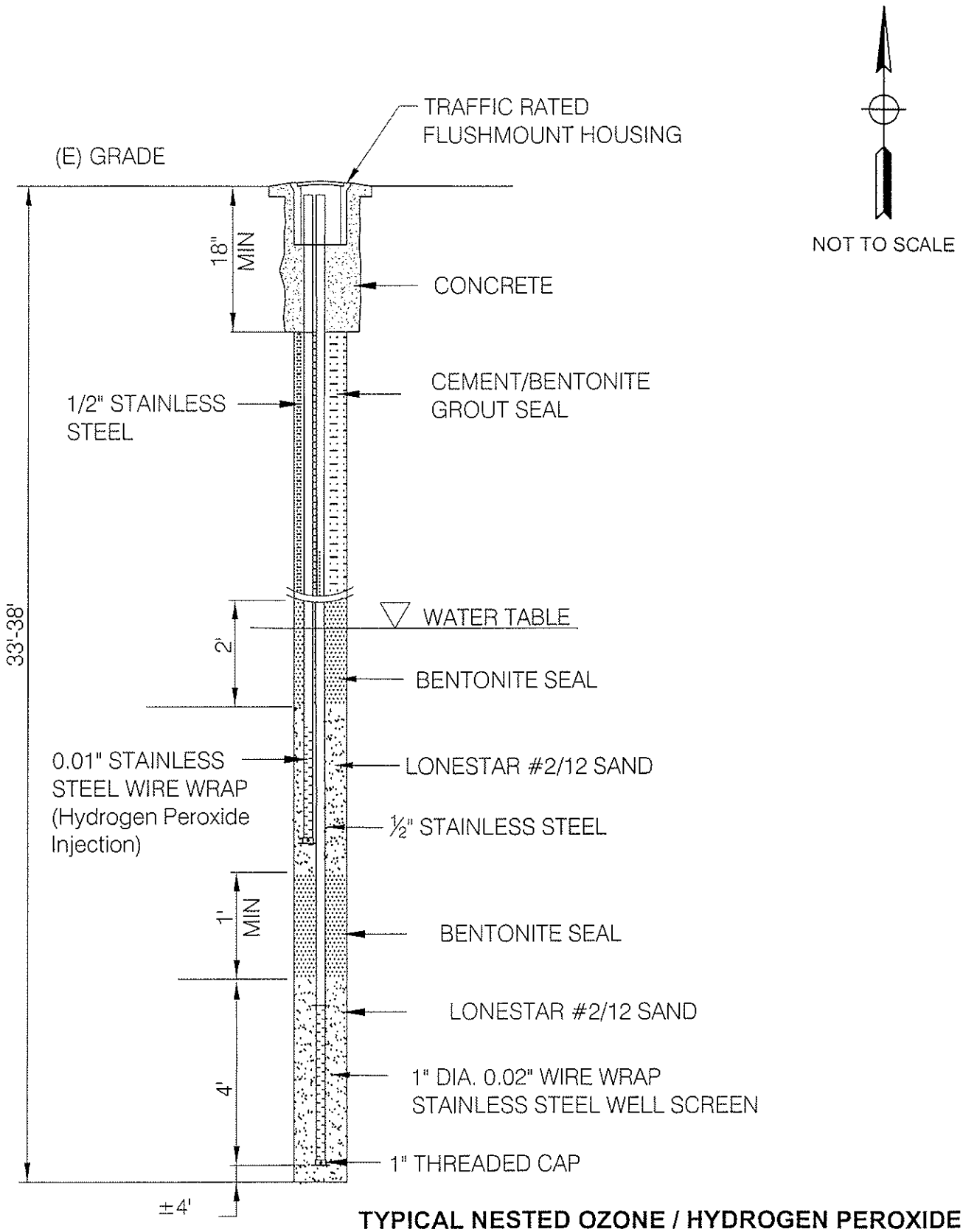
GW-1	MONITORING WELL LOCATION UPPER A AQUIFER
GW-31	MONITORING WELL LOCATION LOWER A AQUIFER
GW-32	UNUSED EXTRACTION WELL PROPOSED FOR DESTRUCTION
GW-18	MONITORING WELL LOCATION B AQUIFER
Ⓔ DPE-1	EXTRACTION WELL LOCATION
SP-1	PROPOSED BIO-SPARGE WELL

NOTE: ALL SPARGE WELLS HAVE 3/8" OZONE AND 1/4" PERIOXIDE TUBING

FORMER MEAD CLARK LUMBER COMPANY
THIRD AND RAILROAD STREETS
SANTA ROSA, CA

NEW OZONE SPARGE SYSTEM PIPING LAYOUT
FIGURE 2

WINZLER & KELLY CONSULTING ENGINEERS



TYPICAL NESTED OZONE / HYDROGEN PEROXIDE SPARGE POINT CONSTRUCTION DETAIL
FORMER MEAD CLARK LUMBER COMPANY
THIRD AND RAILROAD STREETS
SANTA ROSA, CA
FIGURE 3

WINZLER & KELLY
CONSULTING ENGINEERS

Appendix A
Drilling Permit

COUNTY OF SONOMA — DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL HEALTH DIVISION
475 Aviation Blvd., Suite 220, Santa Rosa, CA 95403
Phone (707) 565-6565 Fax (707) 565-6525 www.sonoma-county.org

APPLICATION FOR DRILLING PERMIT
for Regional Board Lead/Environmental Assessment / LOP Lead

For Office Use Only
Amount paid 294.00
Receipt number
Payment date 4-12-00 Rev. code DHB
Site ID# 04
Permit # 4649

Well type: [ ] Monitoring well [ ] Recovery extraction well [ ] Boring [ ] Injection well [ ] Destruct [ ] Environmental assessment
[ ] Soil gas survey [ ] Direct push [ ] Air sparging/venting [ ] Remediation well [X] Other Vapor extraction wells

Well depth 38' Boring depth 38'

On-site well/boring 12 ID # SP-1 thru SP-12 # Off-site well/boring 0 ID # 0

Submit legal right-of-entry/off-site well address/encroachment permit

On-site Address 175 Railroad Avenue, Santa Rosa CA AP# 010-760-001

Facility Name Former Mead Clark Lumber Company

On-site Owner Rim Pacific Santa Rosa LLC Phone

Street 715 17th St. City Modesto State CA Zip 95354

Responsible Party Jean Destruel Phone (707) 576-333

Street P.O. Box 529 City Santa Rosa State CA Zip 95402

Consultant Winzler & Kelly Consulting Engineers Phone (707) 523-1010

Street 495 Technical Circle City Santa Rosa State CA Zip 95401

License #/Type

Drilling Contractor Woodward Drilling Co. Inc. Phone 707-374-4300

Street 550 River Road (P.O. Box 336) City Rio Vista State CA Zip 94571

C-57 License # 710079

Type of work: [ ] Initial investigation # Wells [X] Subsequent investigation (Remediation) 12 # Wells [ ] Destruct # Wells

Groundwater investigation due to: [X] Underground tank [ ] Surface impoundment [ ] Environmental assessment
[ ] Surface disposal practice—specify involved industry
[ ] Other

Perforated intervals 20 - 38' Chemical constituents TPH-gas, BTEX

Disposal method for soil cuttings Drum/onsite Disposal method for development water Drum/onsite

Drilling method HSA Method of drill equip. rinsate containment Drum/onsite

If destroying a well, abandonment method

Submit plot plan of wells in relation to all sewer or septic lines.

Is well to be constructed within: 100 feet of a septic tank or leachfield? [ ] Yes [X] No
50 feet of any sanitary sewer line? [ ] Yes [X] No
25 feet of any private sanitary sewer line? [ ] Yes [X] No

001343D
WELL PER 294.00
TTLANT 294.00
CHECKS 294.00
CHANGE 0.00

In addition, all monitoring wells must include ***identification system*** affixed to interior surface:

1) Well identification 2) Well type 3) Well depth 4) Well casing diameter 5) Perforated intervals

Well identification number and well type shall be ***affixed*** to the ***exterior surface*** security structure.

For Office Use Only

Address 17 Railroad Ave

Site ID# 4

Permit # 4649

I hereby agree to comply with all laws and regulations of the County of Sonoma and State of California pertaining to water well construction. I will telephone (707) 565-6565, 48 hours in advance, to notify the Environmental Health Specialist when completing or destroying a well. I will furnish the Director of Health Services and the owner a legible copy of the State Water Well Driller's Report within 15 days; and a copy of the Summary Report, including sample results, should be received by this Department within 90 days in order to obtain final approval on this well permit. I acknowledge that the application will become a permit ***only*** after site approval and payment of fee. I understand that this permit is not transferable and expires one year from date of issuance.

[signature] Date 4/7/05

Signature of Well Driller—***no proxies***

Insurance Carrier State Fund Expiration Date 1/6/05

Once all wells/borings are installed, submit a Well Driller's Log and/or Summary Report to complete permit process.

Indicate on attached plot plan the exact location of well(s) with respect to the following items: property lines, water bodies or water courses drainage pattern, roads, existing wells, sewer main and laterals and private sewage disposal systems or other sources of contamination or pollution. INCLUDE DIMENSIONS. The validity of this permit depends upon the accuracy of the information provided by the applicant.

Conditions of permit:

FOR OFFICE USE ONLY – ENVIRONMENTAL HEALTH DIVISION

Permit approved by [signature] Date 4/13/05

Constr. approved by ____ Observed? [ ] Yes [ ] No Well # ____ Date __/__/__

RWQCB / LOP approval [signature] Date 4/13/05

Appendix B
Site-Specific Field Procedures

WINZLER & KELLY CONSULTING ENGINEERS

Site-Specific Ozone Sparge Point Installation Procedures
Former Mead Clark Lumber
175 Third and Railroad Streets, Santa Rosa, California

1. Objective

Install ozone sparge points.

2. Background

Ozone sparge points will be installed in accordance with the procedures described herein.

3. Personnel Required and Responsibilities

Staff Geologist: An experienced staff geologist (SG) under the direction of a California Professional Geologist (PG) or Engineer (PE) will ensure that the ozone sparge points will be properly installed and oversee the logging of the borings. The SG will be responsible for complying with the procedures regarding installation of the ozone sparge points and documentation.

Drilling Technicians: Drilling technicians from a drilling company holding a C-57 license will perform the ozone sparge points installation.

4. Equipment Required

- Rotary auger drilling rig
- Level C and D safety equipment
- Boring Log Form / Munsell Soil Color Charts
- Laboratory provided sample containers
- Disposal gloves
- ASTM Classification Guide
- Wash equipment
- Organic Vapor meter (OVM)

5. Procedure

- Winzler & Kelly obtain all required permits prior to installing the ozone sparge points. A Site-Specific Safety Plan detailing site hazards, site safety, and control was prepared prior to any field work. Underground Services Alert (USA) was notified of the planned work at least 48 hours prior to drilling.

- An OVM will be used during the drilling and sampling activities to screen for the presence of Volatile Organic Compounds (VOCs).

- A HSA drilling rig equipped with 8-inch diameter augers will be used to install the ozone sparge points. After the desired depth has been reached the ozone sparge point is constructed by lowering a 1/2-inch diameter stainless steel riser pipe with 1 to 3 feet of 1-inch 0.020 slotted stainless steel well screen threaded at the bottom through the HSAs. The attached sparge assembly is lowered through the HSA annulus to the bottom of the boring. A sand filter pack is installed from the total depth to approximately one foot above the ozone screen. A one-foot thick bentonite seal is then installed above the ozone sand filter pack and three feet of sand filter pack is installed above the bentonite seal. Lastly, a two-foot bentonite seal is installed above the last sand filter pack to prevent the grout from entering the screens. With the bentonite barrier in place, neat cement and bentonite slurry is then installed in the annulus to form a well seal.

- The ozone sparge point borings were installed at varying depths base on the lithology. Soil samples were collected for lithologic descriptions only by driving an 18-inch long, split-spoon sampler at specified intervals.

- Soil types were classified and logged using the ASTM Visual Manual Procedure (D 2488-93) and Munsell Soil Color Charts.

- The lithology, moisture, density, color, sample identification, OVM measurements, and well construction details were recorded on the boring logs as appropriate.

- All ozone/hydrogen peroxide sparge points were constructed using 1/2-inch diameter stainless steel tubing and two (1 foot screen for hydrogen peroxide and 3 feet screen for ozone) 1-inch diameter 0.020-slotted stainless steel well screen. A threaded cap was attached to the bottom of the casing. Ozone/hydrogen peroxide sparge point construction details will be documented on the boring log.

- A sand pack of #2/12 washed sand was used for each slotted well screen (ozone and hydrogen peroxide). The sand will be poured through the HSAs as the augers are removed from the boring.

- A seal of bentonite clay was extended a minimum of 2 feet above hydrogen peroxide sand pack and 1 foot above the ozone sand pack. A cement/bentonite slurry, not exceeding 5 percent bentonite, was placed by tremie pipe to 1.5 feet below the ground surface. The top of the stainless steel casing was approximately 2 inches below grade.

- A duct tape was placed over the top of the casing during well completion to prevent debris from entering the wells.

- The wells were protected by 18-inch flush-mounted traffic boxes set in concrete. The tops of the traffic boxes were set above grade with a gently sloping concrete rim.

- Upon completion of the ozone sparge point installations, each point was secured by bolting down the lid of the flush-mounted traffic box.

Explanation for Winzler & Kelly Boring Logs

Coarse Grained Soils (more than half of soil > No. 200 sieve)	Gravels (More than half of coarse fraction > no. 4 sieve size)		GW	Well graded gravels or gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
			GM	Sandy gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-silt mixtures
	Sands (More than half of coarse fraction < no. 4 sieve size)		SW	Well graded sands or gravelly sands, little or no fines
			SP	Poorly graded sands or gravelly sands, little or no fines
			SM	Silty sands, sand-silt mixtures
			SC	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
Fine Grained Soils (more than half of soil < No. 200 sieve)	Silts and Clays LL = < 50		ML	Inorganic silts and very fine sands, rock flour, silty fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	Silts and Clays LL = > 50		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic silts of high plasticity, fat clays
			OH	Organic.clays of high plasticity, organic silty clays, organic silts
Highly Organic Soils			Pt	Peat and other highly organic soils

Grain Size Chart

Classification	Range of Grain Sizes	
	U.S. Standard Sieve Size	Grain Size In Millimeters
Boulders	Above 12"	Above 305
Cobbles	12" to 3"	305 to 76.2
Gravel	3" to No. 4	76.2 to 7.76
coarse	3" to 3/4"	76.2 to 4.76
fine	3/4"to No.4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.074
coarse	No.4 to No. 10	4.76 to 2.00
medium	No. 10 to No. 40	2.00 to 0.420
fine	No. 40 to No. 200	0.420 to 0.074
Silt and Clay	Below No. 200	Below 0.074

Relative Density (SPT)

SANDS AND GRAVELS	BLOWS/FOOT
VERY LOOSE	0 – 4
LOOSE	4 – 10
MEDIUM DENSE	10 – 30
DENSE	32 – 50
VERY DENSE	OVER 50

Consistency (SPT)

SILTS AND CLAYS	BLOWS/FOOT
VERY SOFT	0 – 2
SOFT	2 – 4
MEDIUM STIFF	4 – 8
STIFF	8 – 16
VERY STIFF	16 – 22
HARD	OVER 32

- ▽ Initial water level measured during drilling (date in italics)
- ▼ Static water level measured after well development (date in italics)
- × Depths where soil samples were recovered

Appendix C
Waste Manifest

REDWOOD LANDFILL INC.
8950 REDWOOD HIGHWAY
P.O. BOX 793
NOVATO, CALIFORNIA 94948
TEL: (415) 892-2851
FAX: (415) 898-1354

- PERSONS USING THESE PREMISES DO SO AT THEIR OWN RISK.
- CHILDREN AND PETS ARE NOT ALLOWED OUT OF VEHICLES.
- NO RUMMAGING IN DUMP AREA.
- NO SMOKING ON DUMP SITE.
- PLEASE NOTIFY OFFICE OF ANY COMPLAINT
- THANK YOU.

By signing, I hereby certify that the below-described material (commodity) contains no infectious, radioactive, volatile, corrosive, flammable, explosive, hazardous, dangerous, or toxic materials or substances or any other material that may violate laws or regulations or that may present a significant risk to human health or the environment, cause a nuisance or otherwise create or expose the landfill to liability.

X _____
DRIVER'S SIGNATURE

RECIEVED BY: REDWOOD JAL
SIGNATURE: _____

ACCOUNT NUMBER: 5071761 CUSTOMER: WINZLER & KELLY CONSULTING ENG
PC:055
VEHICLE: DB-205 TIME: 08:24:13 DATE: 05/18/05
COMMODITY: PC DIRT Cu.yd.: 10.00 LOAD #: 615767
PER YD. : 18.00 FEE 180.00

SOURCE: 30 SANTA ROSA TOTAL: 180.00

*** CHARGE *** CUSTOMER COPY LOAD TICKET #: 1347566

Appendix D
Boring Logs

Explanation for Winzler & Kelly Boring Logs

Coarse Grained Soils (more than half of soil > No. 200 sieve)	Gravels (More than half of coarse fraction > no. 4 sieve size)		GW	Well graded gravels or gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
			GM	Sandy gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-silt mixtures
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			OL	Organic silts and organic silty clays of low plasticity
	Silts and Clays LL = > 50		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
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fine	3/4"to No.4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.074
coarse	No.4 to No. 10	4.76 to 2.00
medium	No. 10 to No. 40	2.00 to 0.420
fine	No. 40 to No. 200	0.420 to 0.074
Silt and Clay	Below No. 200	Below 0.074

Relative Density (SPT)

SANDS AND GRAVELS	BLOWS/FOOT
VERY LOOSE	0 – 4
LOOSE	4 – 10
MEDIUM DENSE	10 – 30
DENSE	32 – 50
VERY DENSE	OVER 50

Consistency (SPT)

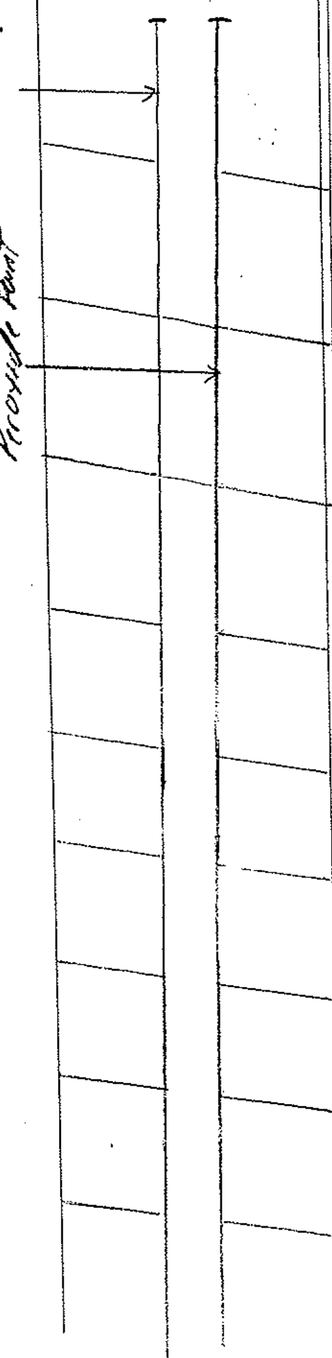
SILTS AND CLAYS	BLOWS/FOOT
VERY SOFT	0 – 2
SOFT	2 – 4
MEDIUM STIFF	4 – 8
STIFF	8 – 16
VERY STIFF	16 – 22
HARD	OVER 32

- ⊻ Initial water level measured during drilling (date in italics)
- ⧓ Static water level measured after well development (date in italics)
- × Depths where soil samples were recovered

BORING LOG

PROJ. NAME: Former Mead Clark site	PROJECT NO.: 02. 42505.001 — Sheet 1 of 3
METHOD OF DRILL: Hollow STEM	LOCATION:
SAMPLER: Split-Spoon OD: 2Ø ID:	LOGGED BY: B.L Wingard — BORING #: SP-1
BORING DIAMETER: 8"	DATE STARTED: 4-28-05 TIME: 08:30
DRILLING CO.: Woodward Drilling	DATE COMPLETED: 4-28-05 TIME:
C57 LIC. #: 710079	TOTAL DEPTH OF BORING: 35 ft
DRILLER: Toby	DEPTH TO GROUNDWATER: N/M
HAMMER WGT.: lbs. — HAMMER DROP: inches	SURFACE CONDITIONS: Asphalt

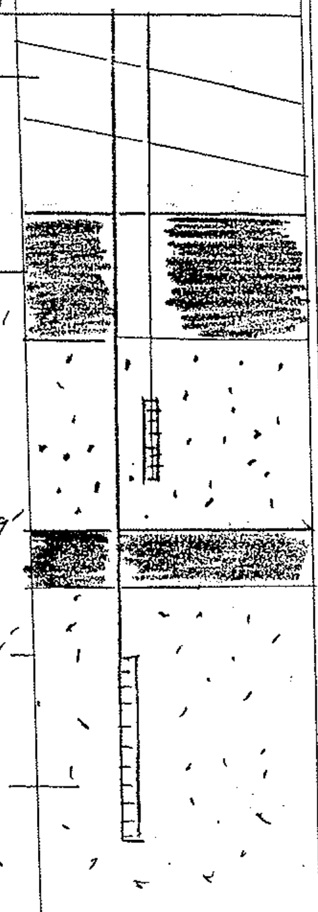
DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
1						HAND-Auger Clear Boring					Provide Point Ozone Point	
2												
3						↓						
4												
5												
6												
7												
8						NOT Logged (Refer TO boring GW-3S).						
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												



BORING LOG

PROJ. NAME: Former Mead Clark site	PROJECT NO.: 02.425.05001	Sheet 2 of 2
	LOGGED BY: B. L. Wingard	BORING #: SP-1

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
22						↓ NOT LOGGED					CEMENT	
23–24						FHC- ODOR						
25–29 (08:45)			19, 24, 29	OBSERVED only		30% CLAY 30% MED- to very Coarse SAND; 40% gravels; WELL Rounded ≥ 5cm	Yellowish Brown 10Y 4/1	WET	DENSE		PLUG 24–26'; 26'–29'	
30–34 (09:05)			29, 30, 35	OBSERVED only		DECREASE in CLAY % (15%) SANDS AND gravels; WELL Rounded w/ pebbles MED-V-Coarse SAND	Brown 10YR 4/1	WET	DENSE		29'; 31'; Monterey washed 2/12 SAND	
35–38					CL	CLAY Contact LEAN CLAY w/ silt and fine SANDS (20%).	LT Brown.					TD: 35' 1-Foot SAND BED (34-35) OZONE point @ 34.0
39–45												



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BORING LOG

PROJ. NAME: Mead Clark Lumber	PROJECT NO.: 0242505001.32004 Sheet 1 of 2
METHOD OF DRILL: 8" hollow stem auger	LOCATION: 175 Railroad Ave
SAMPLER: OD: ID:	LOGGED BY: Pon BORING #: SP 2
BORING DIAMETER: 8"	DATE STARTED: 4/27/05 TIME:
DRILLING CO.: Woodward Drilling Co.	DATE COMPLETED: 4/28/05 TIME:
CST LIC. #: 710079	TOTAL DEPTH OF BORING: 35 feet
DRILLER: Tory	DEPTH TO GROUNDWATER:
HAMMER WGT.: lbs. HAMMER DROP: inches	SURFACE CONDITIONS: asphalt

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
1												
2												Grout 1.5'-25'
3												
4												
5												
6												
7												
8												
9						Not logged for lithology						
10						(filter to bottom (ea. GW-38)						
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												

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CONSULTING ENGINEERS

BORING LOG

PROJ. NAME: Mead Clark Lumber	PROJECT NO.: 012290501.32004	Sheet 2 of 2
	LOGGED BY: PSM	BORING #: [illegible] 2

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
25	CL		50			Sandy Clay w/gravel 15% gravel 30% Sand 55% Clay	Gray	Moist	Hard			Bentonite 25-27 Sand 27-30 Bentonite 30-31
32	GRSW					Poorly graded gravel w/silt and sand 55% gravel 30% Sand 15% fines	Light [illegible]	Wet				Sand 31-35

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BORING LOG

PROJ. NAME: Mad Mack Lumber	PROJECT NO.: 024250500l.32004 — Sheet 1 of 2
METHOD OF DRILL: 8" hollow stem auger	LOCATION: 175 Railroad Ave
SAMPLER: OD: ID:	LOGGED BY: Pon — BORING #: SP-3
BORING DIAMETER: 8"	DATE STARTED: 4/27/05 TIME:
DRILLING CO.: Woodward Drilling Co.	DATE COMPLETED: 4/28/05 TIME:
C57 LIC. #: 710079	TOTAL DEPTH OF BORING: 34.5'
DRILLER: Tony	DEPTH TO GROUNDWATER:
HAMMER WGT.: lbs. — HAMMER DROP: inches	SURFACE CONDITIONS: asphalt

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
1												
2												
3												
4												
5												
6						Not logged for Lithology						Grout 1.5 – 24'
7						(Refer to boring log						
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												

BORING LOG

PROJ. NAME: Reed Clark Lumber	PROJECT NO.: 0242S05001.32004	Sheet: 2 of 2
	LOGGED BY: Pam	BORING #: SP-3

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
22												
23												
24												
25			23			Sandy Clay	Gray	moist	very stiff			Bentonite 24-26
26	CL		55			60% Clay; 35% Sand 5% gravel						
27	SC/GC		25			Gravel w/sand and Clay 50% gravel	light brown	wet	very stiff			Sand 26-29
28			50									
29												Bentonite 29-30
30												
31												
32												Sand 30-34.5
33												
34	GP/GC											
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												

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BORING LOG

PROJ. NAME: Mead Clark Lumber	PROJECT NO.: 0242-05001.32004	Sheet 1 of 2	
METHOD OF DRILL: 8" Hollow stem auger	LOCATION: 175 Railroad Ave		
SAMPLER: OD: ID:	LOGGED BY: Don	BORING #: SP-4	
BORING DIAMETER: 8"	DATE STARTED: 4/27/05	TIME:	
DRILLING CO.: Woodward Drilling Co.	DATE COMPLETED: 4/28/05	TIME:	
CSI LIC. #: 710079	TOTAL DEPTH OF BORING: 34'		
DRILLER: Tony	DEPTH TO GROUNDWATER:		
HAMMER WGT.: lbs. HAMMER DROP: Inches	SURFACE CONDITIONS: asphalt		

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
1												
2												Grout 1.5-24'
3												
4												
5												
6												
7						Not Logged for Lithology						
8						(Refer to boring Log)						
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												

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CONSULTING ENGINEERS

BORING LOG

PROJ. NAME: Mead Clark Lumber	PROJECT NO.: 0242505001 32004	Sheet 2 of 2
	LOGGED BY: Pan	BORING #: SP-4

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
25	TPGC		16 23 50			Gravel w/ Clay and Sand 50% gravel 30% Sand 20% fines	grayish brown to brown	wet	Hard			Bentonite 24-26
27												Sand 26-29'
29												Bentonite 29-30'
30	GrSM		15 50			Gravel w/ silt and Sand 60% gravel 30% sand 10% fines	light brown	wet	Very Dense			Sand 30-34'
32												
34												
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												

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CONSULTING ENGINEERS

BORING LOG

PROJ. NAME:		PROJECT NO.: 0242505D01.32004	Sheet 1 of 2
METHOD OF DRILL: 8" Hollow Stem Auger		LOCATION: 175 Railroad Ave	
SAMPLER:	OD: ID:	LOGGED BY: Don	BORING #: SP-5
BORING DIAMETER: 8"		DATE STARTED: 4/27/05	TIME:
DRILLING CO.: Woodward Drilling Co.		DATE COMPLETED: 4/28/05	TIME:
C57 LIC. #: 710079		TOTAL DEPTH OF BORING: 34'	
DRILLER: Tory		DEPTH TO GROUNDWATER:	
HAMMER WGT.: lbs.	HAMMER DROP: Inches	SURFACE CONDITIONS: Soil	

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
1												
2												
3												Grout 1.5' - 23.5'
4												
5												
6						Not Logged for Lithology						
7						(Refer to boring Log DPE-1)						
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												

See DPE-1

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CONSULTING ENGINEERS

BORING LOG

PROJ. NAME: Mead Clark Lumber	PROJECT NO.: 0212505001.32004	Sheet: 2 of 2
	LOGGED BY: Pon	BORING #: SP-5

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
22	See DPE-1											
23												
24												
25			12			Clayey Gravel w/Sand	Grayish light brown	Wet	Dense			
26	GC		15			60% gravel 20% Clay 20% sand med-coarse gravel						
27			16									Sand 25.5-28.5
28												
29												Bentonite 28.5-29.5'
30			22			Silty Gravel w/Sand	light brown	Wet	Very Dense			
31	GM		50			60% gravel 20% Sand 20% Fines med-coarse gravel						
32												Sand 29.5-34'
33												
34												
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												

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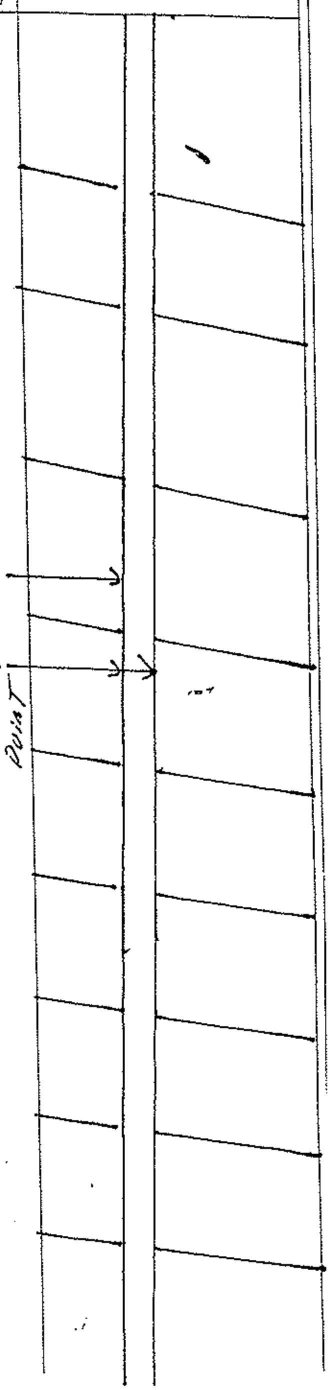
BORING LOG

PROJ. NAME: Former Mead CLARK site		PROJECT NO.: 02. 4250500CV.	Sheet 1 of 3
METHOD OF DRILL: Hollow STEM		LOCATION: 40' EAST OF R.R. Tracks	
SAMPLER: Split Spoon	OD: 2" ID:	LOGGED BY: B.L. Wingard	BORING #: SP-6
BORING DIAMETER: 8"		DATE STARTED: 4-28-05	TIME: 13:00
DRILLING CO.: Woodward Drilling		DATE COMPLETED: 4-28-05	TIME: 16:00
C57 LIC. #: 710079		TOTAL DEPTH OF BORING: 36.5	
DRILLER: Toby		DEPTH TO GROUNDWATER:	
HAMMER WGT.: lbs. 140	HAMMER DROP: inches 30	SURFACE CONDITIONS: Asphalt	

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
1												
2												
3												
4												
5						Not Logged For Lithology to 25 ft. Refer to WELL Log (DPE-1).						
6												
7											OZONE Point	
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												



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BORING LOG

PROJ. NAME: Former MEAD CLARK Site	PROJECT NO.: 02.42505001.	Sheet 2 of 3
	LOGGED BY: B.L. Wingard	BORING #: SP-6

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
22						REFER TO (DPE-1) for Lithologic < 26 ft.					CEMENT	
23												
24							LT Yellowish Brown				24'	
14:25 25		20 / 50 / 5"		OBSERVED only	GC	GRAVELS WITH CLAY and SAND; well graded SAND MED - V-COARSE (35%) 20% CLAY; 45% gravel WELL ROUNDED		WET	DENSE		26'	
27											27'	
28											28'	
29											29'	
30											30'	
14:35 31		12 / 20 / 24				Increase in gravel size 25cm; MATRIX Contained SAND Stringers throughout retrieval < 2" in thickness.	LT Yellowish Brown	WET	MED DENSE		31'	
32												
33												
34											34'	
35						Gradational (34.5 - 36.0)						
14:45 36		12 / 14 / 16				SILTY CLAY						
37												
38												
39												
40												
41												
42												
43												
44												
45												

Bentonite & washed 2/12 SAND

TD: 36.5

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BORING LOG

PROJ. NAME: former Mead Clark site (Marriot Hotel).	PROJECT NO.: 02.425.0500.1	Sheet 2 of 2
	LOGGED BY: B.L.W	BORING #: SB-7

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
22						REFER TO Log OWE-1 For Lithology						Cement
23												
24												
11:10 25			12		SP/SC	Poorly graded Sand w/ clay stringers (≤ 25%) gravels well-rounded 25-30% fine to coarse sand (1/16 - 1.0 mm)	DARK Greenish gray GLEY1 4/1	WET	Dense			
26			12									Plug
27			14									26
28												27
29												28'
11:20 30			17									29
31			50/5									30
32						WELL graded gravels w/ SANDS: 30% med-v-coarse SAND (1/4 - 2 mm); gravels (pebbles) 1 cm diameter up to 4 cm well rounded	LT Brown	WET			31'
33			19									2"/12"(SAND)
34			50/5"									
35							Yellowish Brown 10YR 4/1	dump (clay)		Monitoring washed		35
36					CL							TD: 36.5
37												SAMPLED TO 36.5 ft to Confirm Clay Contact
38												
39						Clay with Sand fine-med Sand 15% 30% Silt.						
40												
41												
42												
43												
44												
45												

Strong Fill-odor/Sand

Contact

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CONSULTING ENGINEERS

BORING LOG

PROJ. NAME: Former Mead Clark Site		PROJECT NO.: 02.425005001.	Sheet 1 of 2
METHOD OF DRILL: Hollow STEM		LOCATION: 40' East of RR Tracks	
SAMPLER: SPT, Split Spoon	OD: 2" ID:	LOGGED BY: B.L. Dingens	BORING #: SB-7
BORING DIAMETER: 8"		DATE STARTED: 4-26-05	TIME: 11:00
DRILLING CO.: Woodward Drilling		DATE COMPLETED: 4-28-05	TIME: 12:45
CST LIC. #: 710079		TOTAL DEPTH OF BORING: 36.5 ft	
DRILLER: Toby		DEPTH TO GROUNDWATER:	
HAMMER WGT.: lbs. 140	HAMMER DROP: inches 30	SURFACE CONDITIONS: Asphalt	

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
1												
2												
3						Not Logged refer To Boring Log (DRE-1)						
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												

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CONSULTING ENGINEERS

BORING LOG

PROJ. NAME: [illegible] Lumber	PROJECT NO: 02925 05001, 32004 — Sheet 1 of 2
METHOD OF DRILL: 8" Hollow Stem Auger	LOCATION: [illegible]
SAMPLER: OD: ID:	LOGGED BY: Poo
BORING DIAMETER: 8"	BORING #: SF-8
DRILLING CO.: Woodward Drilling Co.	DATE STARTED: 4/25/05 TIME:
C57 LIC. #: #710079	DATE COMPLETED: 4/28/05 TIME:
DRILLER: Tony	TOTAL DEPTH OF BORING:
HAMMER WGT.: lbs. / HAMMER DROP: inches	DEPTH TO GROUNDWATER:
	SURFACE CONDITIONS: Soil

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
1												
2												
3												
4												
5												Grout 1.5'-23'
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												

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BORING LOG

PROJ. NAME: Mead Clark Lumber	PROJECT NO.: 029250501.32004	Sheet: 2 of 2
	LOGGED BY: Pon	BORING #: SP-8

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
22												
23												
24												Bentonite 23'-26'
25												
26												Sand 26'-28'
27												
28												Bentonite 28'-29'
29												
30												
31												
32												Sand 29'-38'
33						@34.5' driller reports -						
34						sand & gravel -						
35	CL	X	7			Silty clay w/	Yellowish	wet	very			
36		X	7			Sand - 25%	brown		stiff			
		X	11			F. sand - 20%	10YR					
37		X	10			F. gravel - 5%	5/6					
	SM	X	12			Silty Sand			medium			
38		X	17			f. gravel - 5%						
						Sand - 65%		wet -				
39						silt - 30%		Dry				
						clay - 10%						
40												
41												
42												
43												
44												
45												

See well GW-7

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BORING LOG

PROJ. NAME: [illegible]

METHOD OF DRILL: 8" Hollow Stem Auger

SAMPLER: OD: ID:

BORING DIAMETER: 8"

DRILLING CO.: Woodward Drilling Co.

C57 LIC. #: 710079

DRILLER: Torg

HAMMER WGT.: lbs. HAMMER DROP: inches

PROJECT NO.: 0242505001.32004 | Sheet 1 of 2

LOCATION: 175 Railroad Ave

LOGGED BY: Ron

BORING #: SP-9

DATE STARTED: 4/25/05 TIME:

DATE COMPLETED: 4/28/05 TIME:

TOTAL DEPTH OF BORING: 34'

DEPTH TO GROUNDWATER:

SURFACE CONDITIONS: Soil

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
1												
2												
3												Grout
4												1.5 - 24'
5												
6												
7												
8												
9												
10												
11	See DPE-7											
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												

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BORING LOG

PROJ. NAME: Mead Clark Lumber	PROJECT NO.: 024250501.32004	Sheet: 2 of 2
	LOGGED BY: Pon	BORING #: SP-9

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
22												
23												
24												Bentonite 24'-26'
25			12			Gravel w/Sand	Dark Grayish	wet	Dense			
26	GW		17			coarse gravel - 65%	10Y					
			30			coarse sand - 25%	4/1					
27						fines - 10%						Sand 26-29
28												
29												Bentonite 29-30
30			22			Gravel w/Sand	Dark Grayish	wet	loose			
31	GW		50			Small gravel 65%	10Y					Sand 30-34
32						coarse sand - 25%	4/1					
33						fines = 10%						
34												
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												

WINZLER & KELLY
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BORING LOG

PROJ. NAME: Alcan Clare [illegible]		PROJECT NO.: 02475D5D01.32004	Sheet 1 of 2
METHOD OF DRILL: 8" Hollow Stem Auger		LOCATION: 175 Railroad Ave.	
SAMPLER: Tory	OD: ID:	LOGGED BY: Pon	BORING #: SP-10
BORING DIAMETER: 8"		DATE STARTED: 4/26/05	TIME:
DRILLING CO.: Woodward Drilling Co.		DATE COMPLETED: 4/29/05	TIME:
C57 LIC. #: 710079		TOTAL DEPTH OF BORING: 34'	
DRILLER: Tory		DEPTH TO GROUNDWATER:	
HAMMER WGT.: lbs.	HAMMER DROP: inches	SURFACE CONDITIONS: Soil	

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
1												
2												
3												Grout 1.5-24
4												
5												
6												
7						Not logged for Lithology						
8						(Refer to boring log DPE-7)						
9												
10												
11												
12												
13	See DPE-7											
14												
15												
16												
17												
18												
19												
20												
21												

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BORING LOG

PROJ. NAME: Mead Clark Lumber	PROJECT NO.: 0247505001.32004	Sheet 2 of 2
	LOGGED BY: Pon	BORING #: SB 10

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
22												
23												
24												Bentonite 24-26
25	GP-GC		32		GP-GC	Sandy Gravel w/ Clay 60% Gravel 15% Sand 10% fines	grayish brown	Wet	Very Dense			
26			50									
27												Sand 26-29
28												
29												Bentonite 29-30
30	GP-GC		22		GP-GC	Sandy Gravel w/ Clay 60% gravel 15% sand 10% fines	grayish brown	Wet	Very Dense			
31			50									
32												Sand 30-34
33	GP-GC		26		GP-GC	Sandy Gravel w/ Clay 55% Gravel 20% Sand 10% fines	Grayish brown	Wet	Very Dense			
34			77									
			39									
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												

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BORING LOG

PROJ. NAME: Mad Clark Lumber	PROJECT NO.: 0242505001.32004	Sheet 1 of 2	
METHOD OF DRILL: 8" Hollow Stem Auger	LOCATION: 175 Railroad Ave		
SAMPLER: OD: ID:	LOGGED BY: Ron	BORING #: SP-11	
BORING DIAMETER: 8"	DATE STARTED: 4/26/05	TIME:	
DRILLING CO.: Woodward Drilling Co.	DATE COMPLETED: 4/27/05	TIME:	
C57 LIC. #: 710079	TOTAL DEPTH OF BORING: 33.5'		
DRILLER: Tory	DEPTH TO GROUNDWATER:		
HAMMER WGT.: lbs.	HAMMER DROP: inches	SURFACE CONDITIONS: Soil	

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
1												
2												
3												Grout 1.5'-23.5'
4												
5												
6						Not logged for Lithology						
7						(Refer to boring Log Total-33')						
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												

See Well-32

11-39

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BORING LOG

PROJ. NAME: Mead Clark lumber	PROJECT NO.: 024250501.32004	Sheet: 2 of 2
	LOGGED BY: Pan	BORING #: SP-11

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
25	SP-SC	X	22			Sandy Gravel w/ Silt 60% gravel 30% Sand 10% fines	Grayish Brown	wet	Dense			Bentonite 23.5'-25.5'
26		X	55									
27												Sand 25.5'-28.5'
28												
29												Bentonite 28.5-29.5
30												
31												Sand 29.5-33.5
32												
33	SP-SC	50				Sandy Gravel w/ Silt 60% gravel 30% Sand 10% fines	Grayish brown	wet	Dense			
34												
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												

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BORING LOG

PROJ. NAME: Wood Clark Lumber	PROJECT NO.: 0242505001.32C04	Sheet 1 of 2	
METHOD OF DRILL: 8" Hollow Stem Auger	LOCATION: 175 Railroad Ave		
SAMPLER: OD: ID:	LOGGED BY: Pam	BORING #: SP-12	
BORING DIAMETER: 8"	DATE STARTED: 4/27/05	TIME:	
DRILLING CO.: Woodward Drilling Co.	DATE COMPLETED: 4/29/05	TIME:	
CSI LIC. #: 710579	TOTAL DEPTH OF BORING: 33'		
DRILLER: Tony	DEPTH TO GROUNDWATER:		
HAMMER WGT.: 0 lbs.	HAMMER DROP: Inches	SURFACE CONDITIONS: Soil	

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
1												
2												
3												Grout 1.5-23
4												
5												
6						Not Logged for Lithology (Refer to Boring Log GW-32)						
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												

See GW-32

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BORING LOG

PROJ. NAME: Ned Clark Lumber | PROJECT NO.: 02425050061.32004 | Sheet 2 of 2
LOGGED BY: Ron | BORING #: SP-12

DEPTH	GRAPHIC SYMBOL	RECOVERY	BLOWS	SAMPLE NO.	USCS SYMBOL	SOIL DESCRIPTION	COLOR	MOISTURE	CONSISTENCY	PID (ppm)	WELL CONSTR.	WELL DESCRIPTION
22												
23												
24												Bentonite 23-25
25	GP-GC		27			Sandy Gravel	Grayish	wet	Very			
			50			w/ Clay	Brown		Dense			
26						med-coarse gravel						Sand 25-28
						see GW-32						
27						60% - gravel						
						25% - sand						
28						15% fines						Bentonite 28-29
29												
30	GP-GM		28			Sandy Gravel	Grayish	Wet	Very			
			55			w/ Silt	Brown		Dense			Sand 29-33
31						med - Coarse Gravel						
						60% - gravel						
32						25% - Sand						
						15% - fines						
33												
34												
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												

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